

William Vanarsdell

**Exhibit No. 5**  
For Identification

10/8/18

CM

## Safety Restraint Examination







Authority: 1949 PA 302, Sec.257.822 Compliance: Required MSP UD-10E Penalty: \$100 and/or 90 days (Rev 11/2006)		External # #####		Crash ID 8036809		Page 01 of 01 Incident # ##### File Class 9300-1	
<b>STATE OF MICHIGAN TRAFFIC CRASH REPORT</b>							
OR: MI 6326200		Department Name Bloomfield Twp Police Dept					
Crash Date 05/19/2011	Crash Time 01:07	No. of Units 01	Crash Type Single Motor Vehicle	Special Circumstances <input type="checkbox"/> School Bus <input checked="" type="checkbox"/> None <input type="checkbox"/> Deer <input type="checkbox"/> Fleeing Police <input type="checkbox"/> Hit and Run		Special Checks <input type="checkbox"/> Fatal <input type="checkbox"/> Non-Traffic Area <input type="checkbox"/> ORV/Snowmobile	
County 63 - Oakland	Traffic Control None	Relation to Roadway Shoulder		Special Study	Weather Cloudy	Area 10 - NON-FRWY Straight roadway	
City/Twp 03 - Bloomfield Twp	Construction Zone (if applicable) Type		Lane Closed	Activity	Light Dark-Unlighted	Road Condition Wet	Total Lanes 03
						Speed Limit 50	Posted Yes
<b>LOCATION</b>							
Prefix	Road Name WOODWARD		Road Type AVE		Suffix Divided Roadway		
Distance 700 Feet N	Traffic Way 02 - Divided Hwy w/barrier				Access Control 03 - Other, partial control		
Prefix W	Intersecting Road BIG BEAVER		Road Type RD		Suffix Divided Roadway		
<b>UNIT/DRIVER</b>							
Unit Number 01	Unit Known Yes	State MI	Driver License Number #####	Date of Birth (Age) 07/23/1991 (19)	License Type <input checked="" type="checkbox"/> Operator <input type="checkbox"/> Chauffeur <input type="checkbox"/> Moped	Endorsements <input type="checkbox"/> Cycle <input type="checkbox"/> Farm <input type="checkbox"/> Recreation	Sex M
Total Occupants 01	Hazardous Action 16 - Careless/negligent						
Unit Type MV	Driver Information ##### BLOOMFIELD HILLS, MI 48304-3554 (###) ###-####				Injury A	Position 01	Restraint 04
Hospital WILLIAM BEAUMONT HOSPITAL							
Driver Condition <input type="checkbox"/> 01 <input type="checkbox"/> 02 <input type="checkbox"/> 03 <input type="checkbox"/> 04 <input type="checkbox"/> 05 <input checked="" type="checkbox"/> 06 <input type="checkbox"/> 07 <input type="checkbox"/> 08 <input type="checkbox"/> 09 <input type="checkbox"/> 00			Interlock No	Ejected	Trapped	Airbag Deployed Yes	Ambulance BLOOMFIELD TWP FIRE DEPT
Alcohol <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Test Type <input type="checkbox"/> Field <input type="checkbox"/> PBT			Not offered <input type="checkbox"/> Breath <input type="checkbox"/> Blood <input type="checkbox"/> Urine Test Results		Drugs <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Test Type <input type="checkbox"/> Blood <input type="checkbox"/> Urine Test Results		Citation Issued <input type="checkbox"/> Hazardous <input type="checkbox"/> Other
Vehicle Registration #####		State MI	Insurance / Policy # #####		Towed To/By #####		Special Vehicles 0
VIN #####		Vehicle Description MERCURY	Make MARQUIS	Model BLUE	Year 2003	Vehicle Type Passenger Car	
Location of Greatest Damage 07		First Impact 08	Extent of Damage 7	Driveable No	Vehicle Direction S	Vehicle Use 01 - Private	Action Prior 01 - Going Straight Ahead
Sequence of Events (1 indicates MOST harmful event) First 04 - Ran off roadway-right Second 39 - Tree Third Fourth							
Passenger Information				Date of Birth (Age) Sex Position Restraint Hospital			
Injury Airbag Deployed Ejected Trapped Ambulance							
Passenger Information				Date of Birth (Age) Sex Position Restraint Hospital			
Injury Airbag Deployed Ejected Trapped Ambulance							

Road Type AVE		Suffix		Divided Roadway	
Traffic Way 02 - Divided Hwy wo/barrier			Access Control 03 - Other, partial control		
Road Type RD		Suffix		Divided Roadway	
Date of Birth (Age) 07/23/1991 (19)	License Type <input checked="" type="radio"/> Operator <input type="radio"/> Chauffer <input type="radio"/> Moped	Endorsements <input type="radio"/> Cycle <input type="radio"/> Farm <input type="radio"/> Recreation	Sex M	Total Occupants 01	Hazardous Action 16 - Careless
#) ###-####	Injury A	Position 01	Restraint 04	Hospital WILLIAM BEAUMONT HOSPITAL	
	Interlock No	Ejected	Trapped	Airbag Deployed Yes	Ambulance BLOOMFIELD TWP FIRE DEPT
Test Results	Drugs <input type="radio"/> Yes <input checked="" type="radio"/> No Test Type <input type="radio"/> Blood <input type="radio"/> Urine	Test Results	Citation Issued <input type="radio"/> Hazardous <input type="radio"/>		
#####	Towed To/By #####			Special Vehicles 0	Private Trailer
Model MARQUIS		Color BLUE		Year 2003	Vehicle Type Passenger Car



The value entered here is the *investigator's* opinion

Road Type AVE		Suffix		Divided Roadway	
Traffic Way 02 - Divided Hwy w/o barrier		Access Control 03 - Other, partial control			
Road Type RD		Suffix		Divided Roadway	
Date of Birth (Age) 07/23/1991 (19)	License Type ● Operator ○ Chauffeur ○ Moped	Endorsements ○ Cycle ○ Farm ○ Recreation	Sex M	Total Occupants 01	Hazardous Action 16 - Careless
Injury A	Position 01	Restraint 04	Hospital WILLIAM BEAUMONT HOSPITAL		
#) ###-####					
Interlock No	Ejected	Trapped	Airbag Deployed Yes	Ambulance BLOOMFIELD TWP FIRE DEPT	
Test Results		Drugs ○ Yes ● No Test Type ○ Blood ○ Urine	Test Results		Citation Issued ○ Hazardous
Towed To/By #####		Special Vehicles 0		Private Trailer	
Model MARQUIS		Color BLUE	Year 2003	Vehicle Type Passenger Car	

Occupant's statement

Witness's statement

EDR

Physical evidence

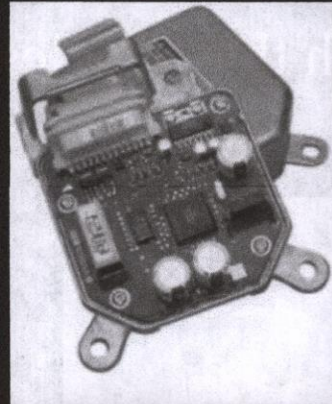
Injury pattern

## Choices, Choices

<u>Restraint</u>		<u>Helmet</u>	
01	No belts available	10	Helmet worn
02	Shoulder belt only used	11	Helmet not worn
03	Lap belt only	12	Helmet use unknown
04	Shoulder and lap belt used		
05	No belts used		
06	Child restraint used		
07	Child restraint not used, not available or improper		
08	Restraint failure		
09	Restraint use unknown		

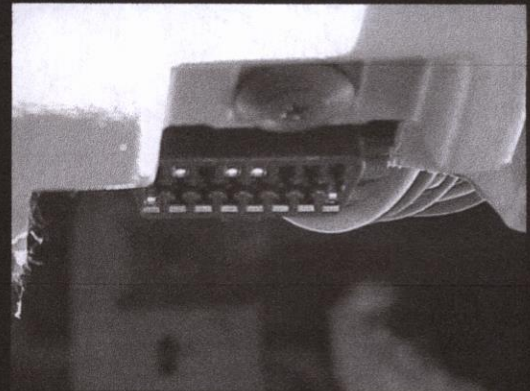


## Event Data Recorder



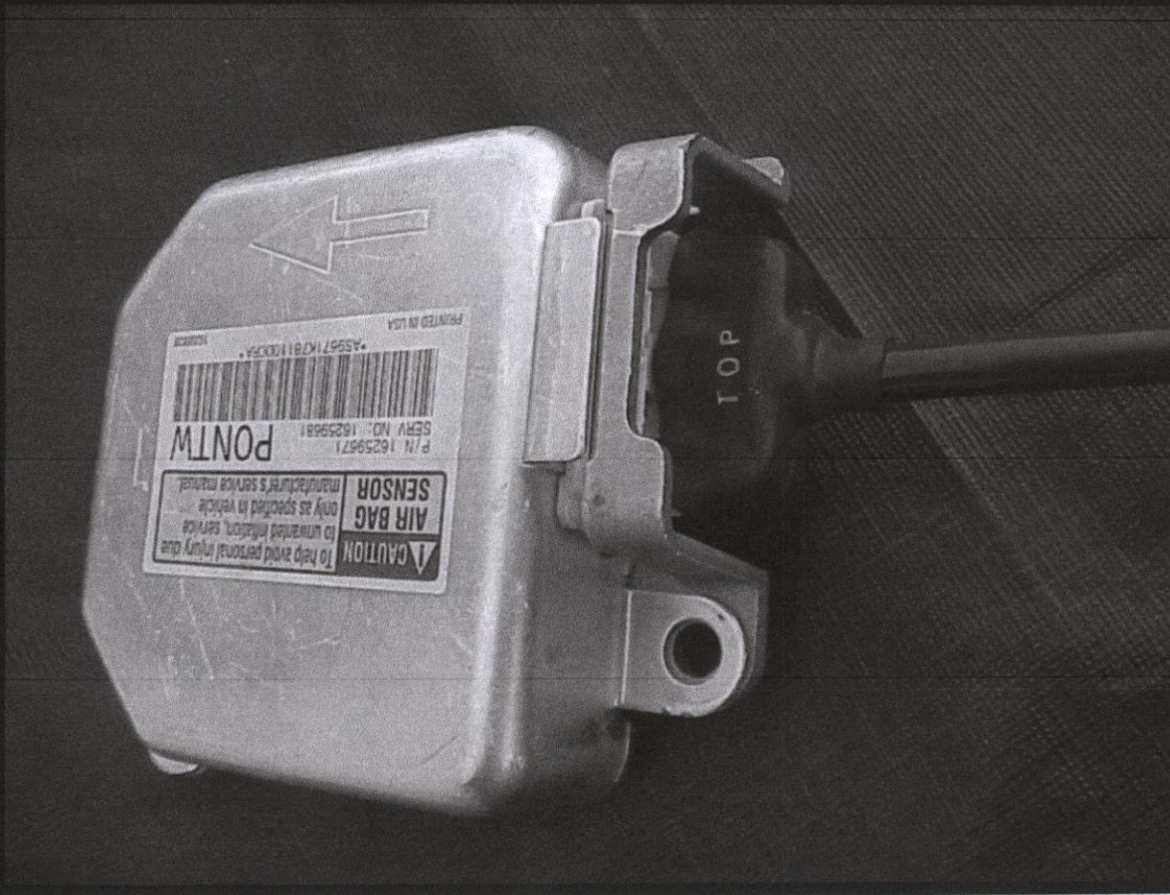
## Two Methods to Download Data

Through the vehicles Diagnostic Link Detector (DLC)





Direct to the airbag module



## The Only Ways To Unlatch a Buckle In A Crash

- OVERLOAD
- INADVERTENT CONTACT
- FALSE LATCH
- PARTIAL ENGAGEMENT
- INERTIAL RELEASE





Knowing that seatbelt buckles can unlatch in a crash, it is incumbent on any type of investigator to conduct a thorough seatbelt investigation before concluding a person was belted or unbelted when an crash began. However, this isn't always done.

In fact, oftentimes, people jump to a conclusion that a person was unbelted when they see or learn that a person was ejected from the vehicle during a motor vehicle crash.





## “UNBUCKLED” STATUS IS SOMETIMES WRONG

If someone relies exclusively on the sensing diagnostic module (SDM) data retrieved from the vehicle's onboard computer, they may be relying on flawed data. The NHTSA has uncovered hundreds of accidents where the SDM indicated the ejected person was in fact "buckled."

 	
Vehicle Identification Number	3GNFK16R8XG134932
Investigator	John
Case Number	scott krist
Investigation Date	02-08-02
Crash Date	
Filename	3GNFK16R8XG134932 #1.CDR # 3
Saved on	2/8/02 1:07:10 PM
Data check information	A4800871
CDR version	Crash Data Retrieval Tool 1.200
Program verification number	848D3C91

 	
<b>System Status At Near Deployment</b>	
SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	BUCKLED
Passenger Front Air Bag Suppression Switch Circuit Status	Air Bag Not Suppressed
Ignition Cycles At Near Deployment	6517
Ignition Cycles At Investigation	6520
Algorithm Enable to Maximum SDM Recorded Velocity Change (msec)	63.75
Maximum SDM Recorded Velocity Change (MPH)	-8.3372





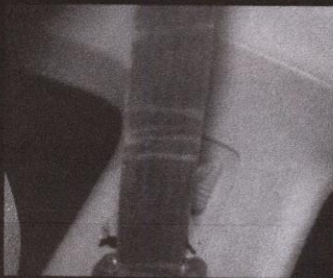
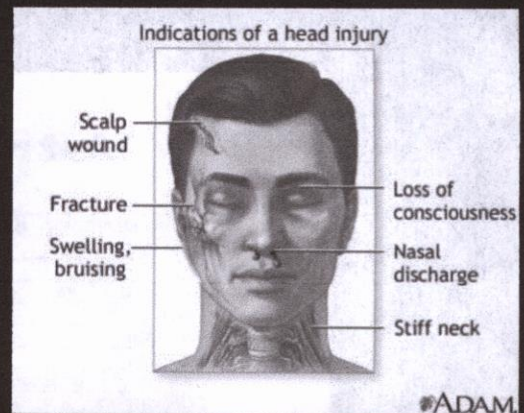
Vehicle Identification Number	3GNFK16R8XG134932
Investigator	John
Case Number	scott krist
Investigation Date	02-06-02
Crash Date	
Filename	3GNFK16R8XG134932 #1.CDR #3
Saved on	2/6/02 1:07:10 PM
Data check information	A480CB71
CDR version	Crash Data Retrieval Tool 1.200
Program verification number	948D3C51



#### System Status At Near Deployment

SIR Warning Lamp Status	OFF
Driver's Belt Switch Circuit Status	BUCKLED
Passenger Front Air Bag Suppression Switch Circuit Status	Air Bag Not Suppressed
Ignition Cycles At Near Deployment	6517
Ignition Cycles At Investigation	6520
Algorithm Enable to Maximum SDM Recorded Velocity Change (msec)	93.75
Maximum SDM Recorded Velocity Change (MPH)	-8.3372

## Physical Evidence





There have been crashes reported where the decedent was still found belted inside his vehicle and the EDR download indicated "unbuckled." Still other reported accidents had the decedent ejected from his vehicle when the seat collapsed rearward, and yet the buckle was still latched but the EDR download indicated "unbuckled."

Some, crash investigators have concluded that people are unbelted when they are ejected or displaced from their reported seating position inside the vehicle.

Jumping to a conclusion without evaluating any of the physical, medical or forensic evidence is a rather close-minded and shallow methodology. In fact, it is no methodology at all.



SOMETIMES SEATBELT USAGE EVIDENCE  
IS VERY OBVIOUS SUCH THAT THERE ARE  
"TRADITIONAL" WITNESS MARKS



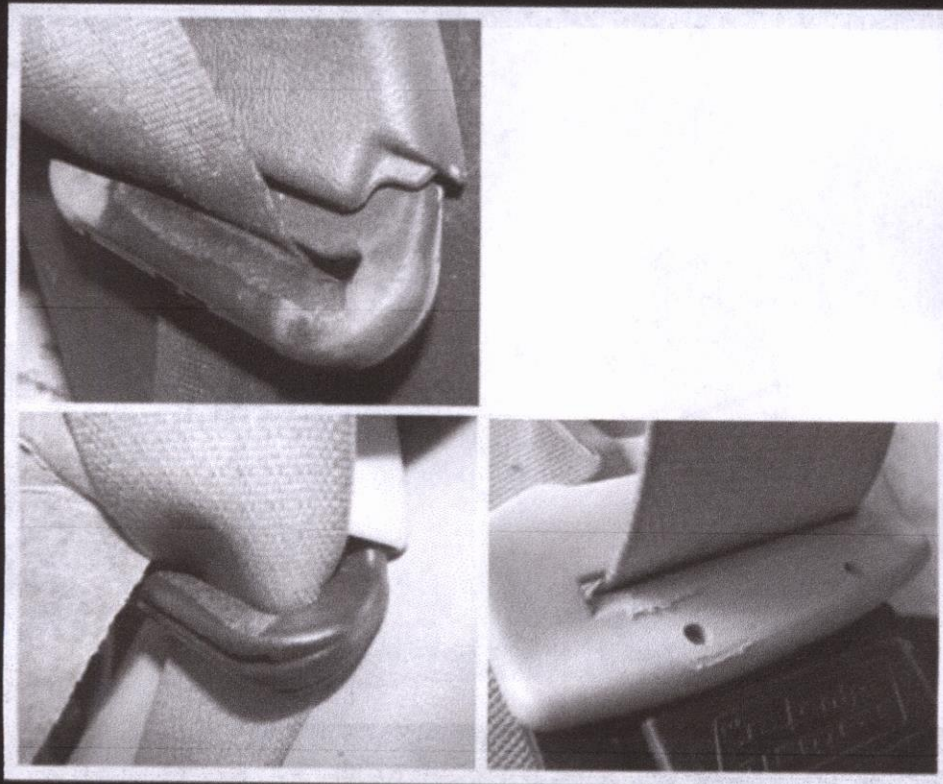


Retractor jammed with webbing extended.



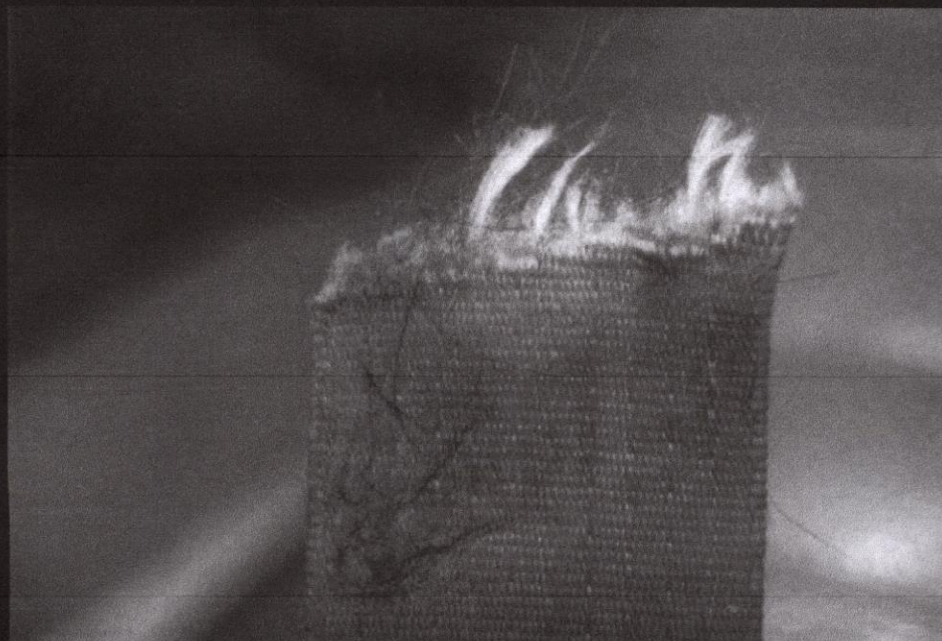


Retractor frame damaged when seatbelt load is applied.

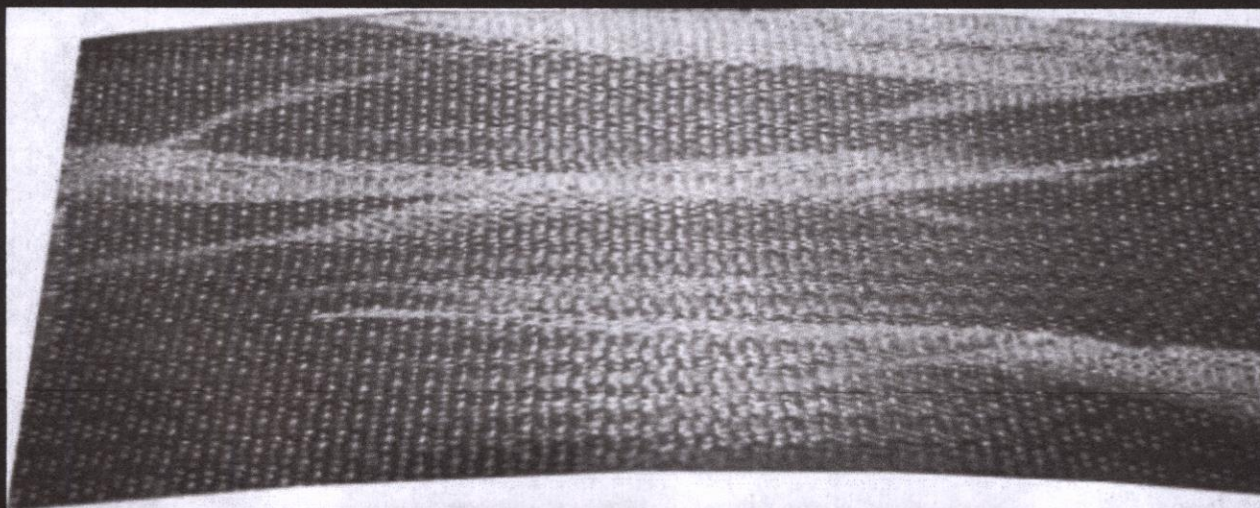


Imprint of the webbing in plastic coated parts of the restraint, such as the latch plate or D-ring. There is often a corresponding transfer of plastic to the webbing.



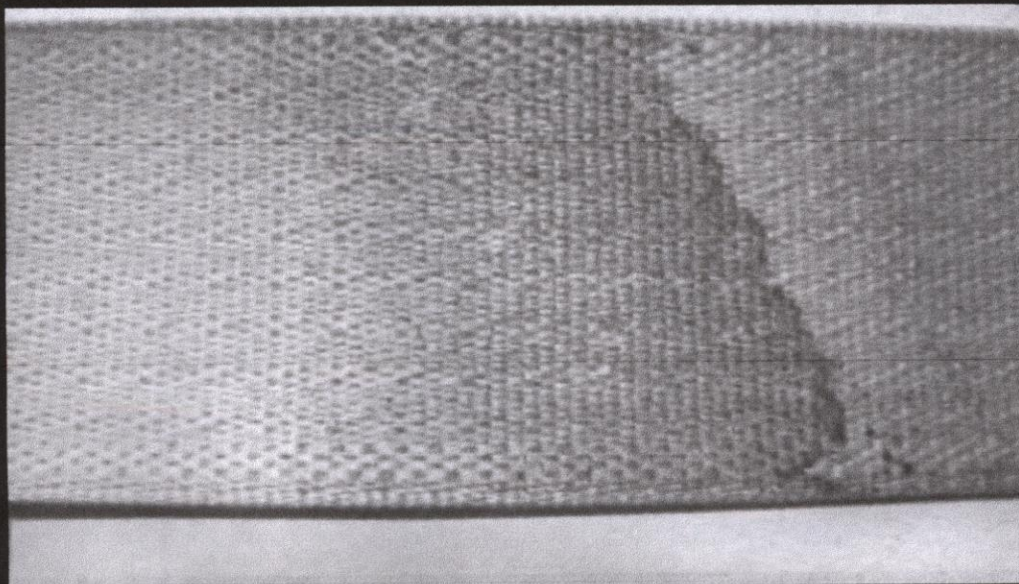


Torn or broken seatbelt webbing due to overload or a sharp surface.

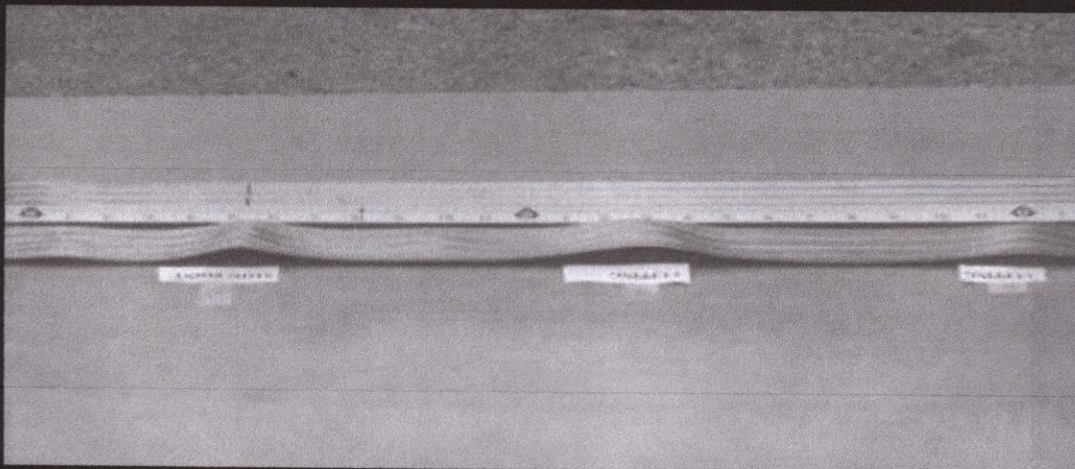


Webbing is discolored due to clothing transfer.





Plastic transfer from D-ring / latch plate on webbing.

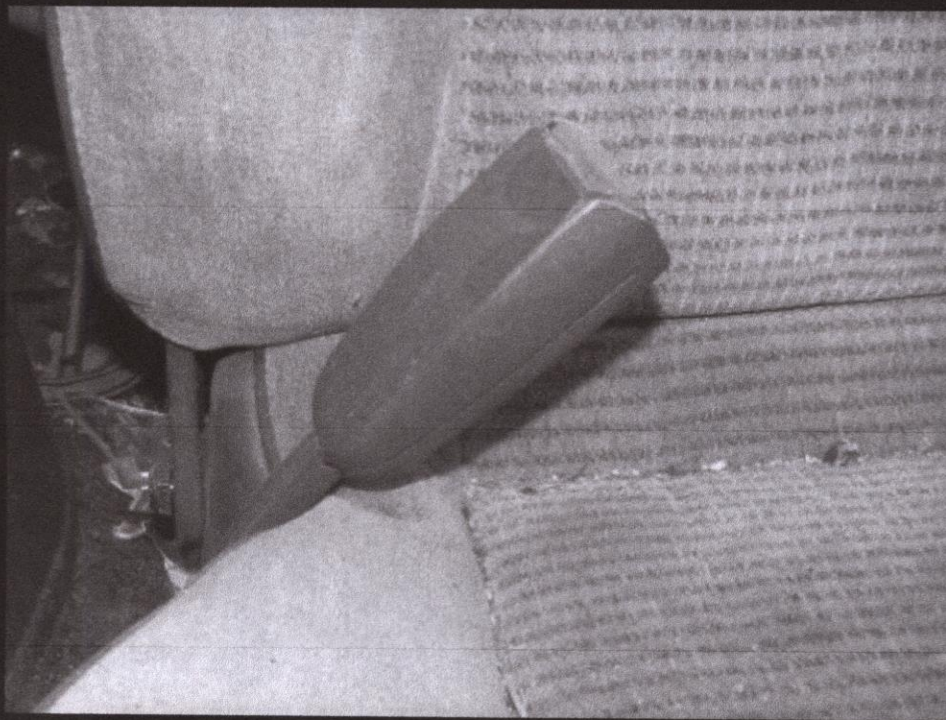


Webbing curled. (Also often called "cupping")  
This is caused from occupant loading.



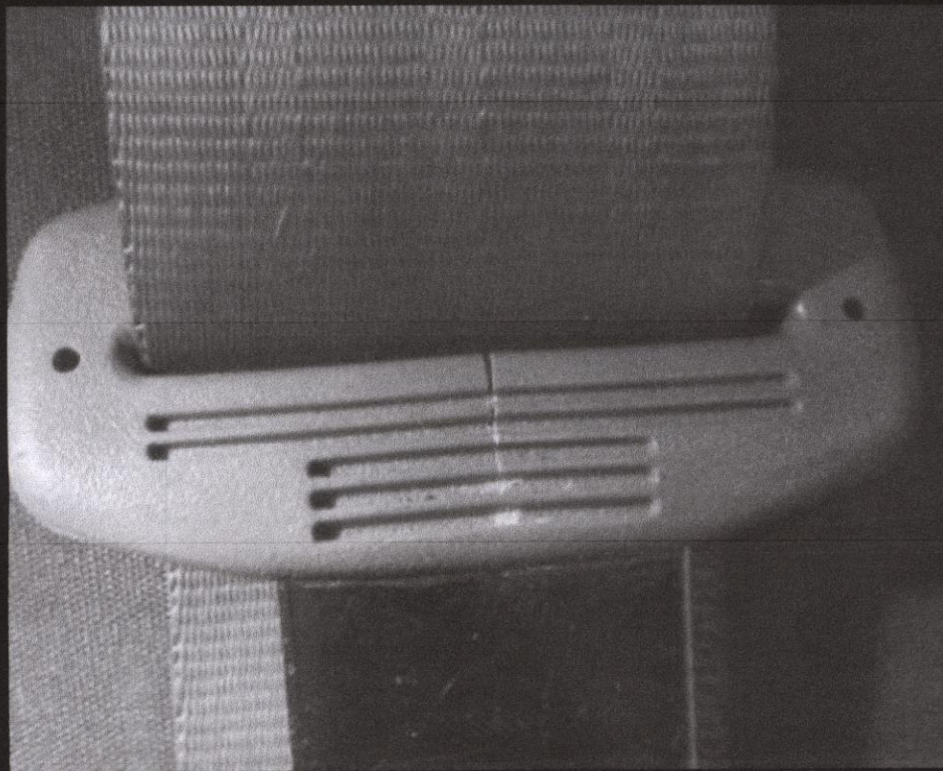


D-ring fractured due to loading.

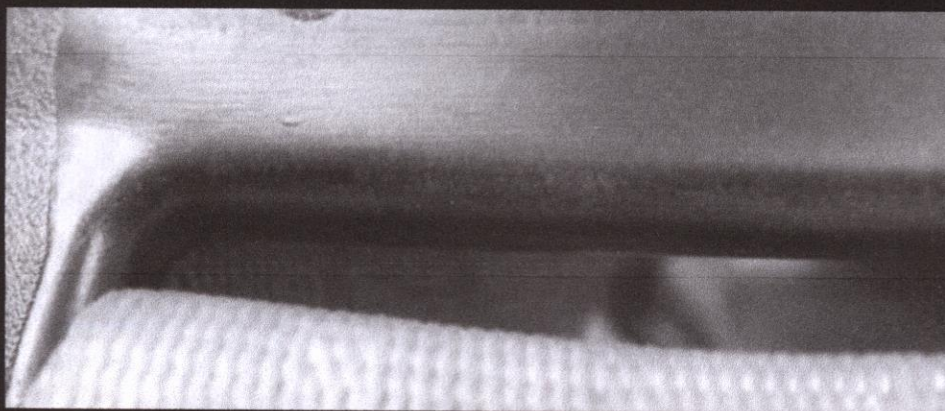


Seatbelt buckle stalk is deformed due to loading.





Latch plate fractured due to loading



Friction marks may be visible





Airbag deployment prevented loading

## Injury Patterns





## External Injuries

### **Chest Injuries**

Patchy abrasions and purple contusions involve inner upper and lower quadrants of left breast

Confluent to punctate hemorrhages with linearity.

Purple contusions and red abrasions extend at an angle from left neck base across left supraclavicular fossa and left clavicle, across left breast, across mid chest and across lower right anterior chest

### **Right Wrist**

Palpable dislocation

### **Abdomen**

Distended with horizontal abrasion of left upper quadrant and vertical abrasions of lateral right upper quadrant.

### **Facial Injuries**

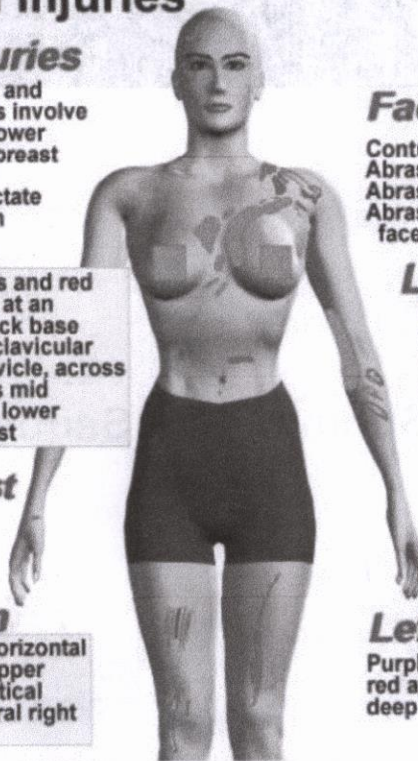
Contusion of left intraorbital ridge  
Abrasion of right forehead  
Abrasion of right eyelid  
Abrasions to right side of face

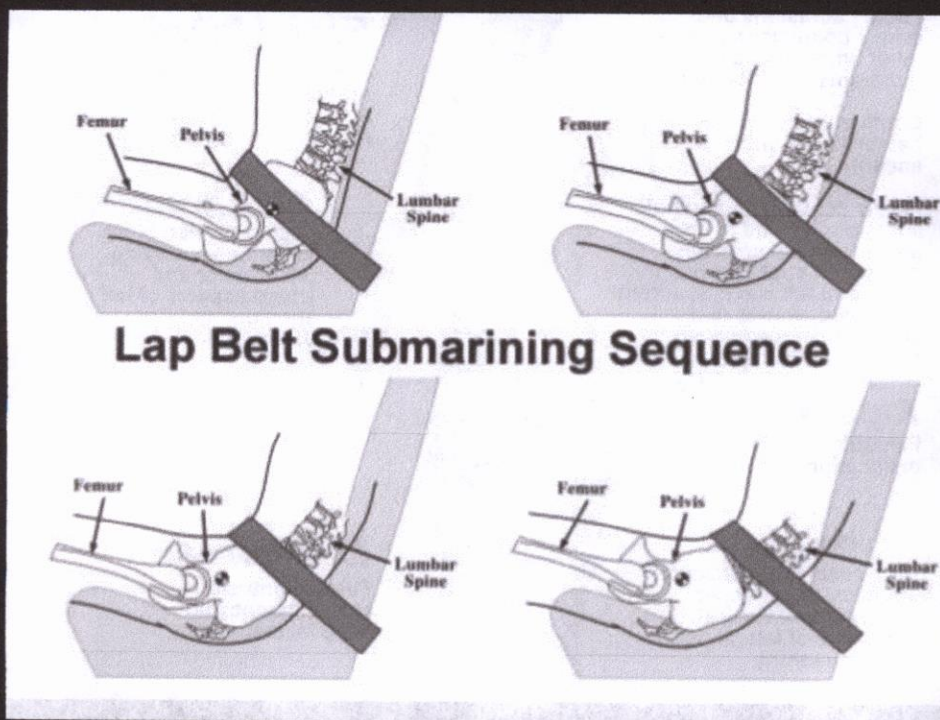
### **Left Shoulder**

deep brownish-black abrasions overlying the anterior and lateral aspects of left shoulder and base of the neck

### **Left Forearm**

Purple contusions, red abrasions and deep lacerations





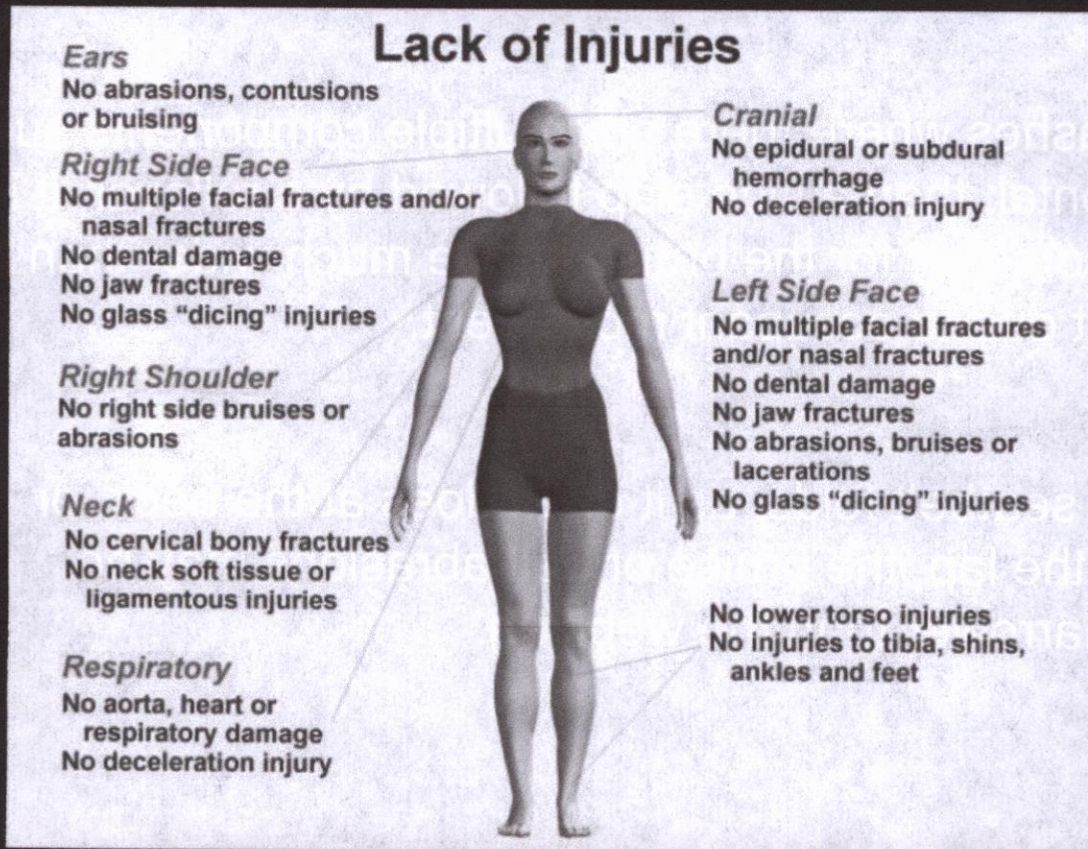


Injury marks may not always be 1  $\frac{3}{4}$  inches

- In crashes where there are multiple components such as a frontal, then a side slap followed by a rollover, it is not uncommon for the bruises to be much wider than the seatbelt due to occupant movement.
- If the seatbelt folds, as it often does at the neck, or across the lap, the bruise or belt abrasions may be much narrower than the webbing.



Any determination of seatbelt use should also evaluate the absence of injuries to the individual whose belt use is being evaluated.





## LACK OF INJURIES

Any determination of seatbelt use should also evaluate the absence of injuries to the individual whose belt use is being evaluated.

Facial abrasions, contusions or lacerations

Fractured facial bones

Fractured nasal bones

Cervical fractures

Cervical ligamentous injuries

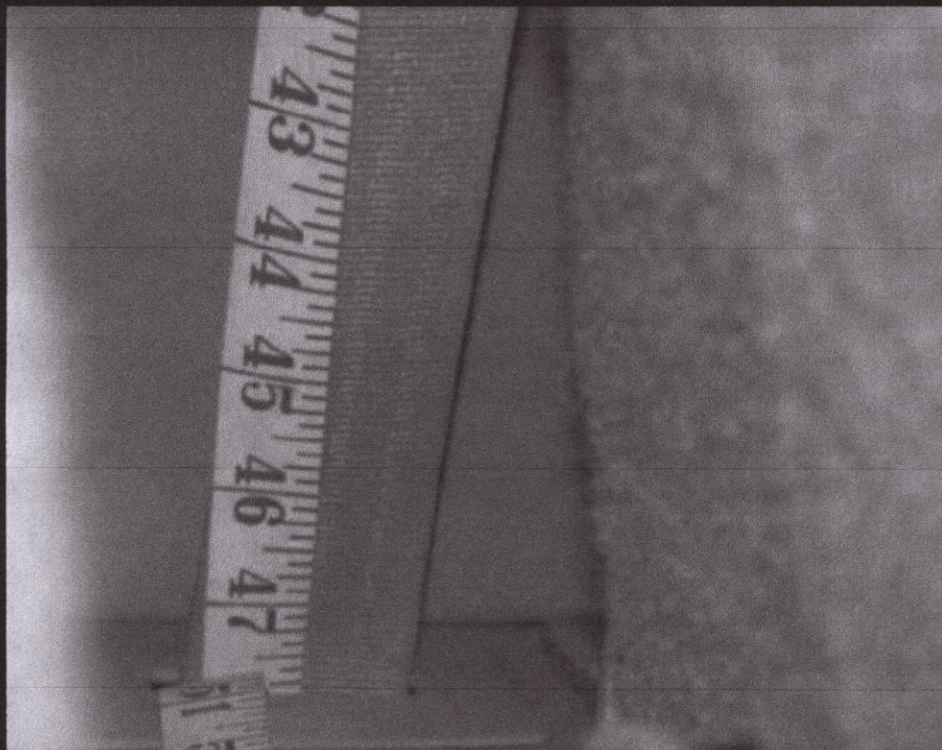
External skull fractures

Abrasions and contusions to shoulders

Abrasions, contusions to lower torso

Fractures to patellas, tibias, fibulas and ankles

## Investigate, Test and Document

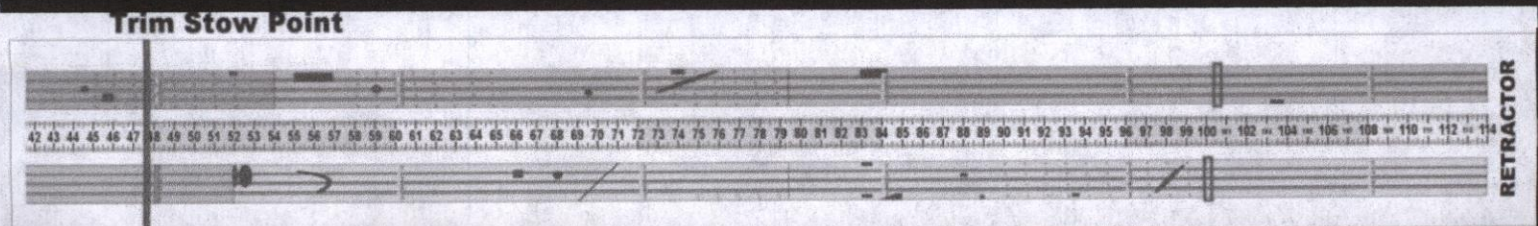


First, determine where the webbing goes into the trim such that the webbing is not exposed to the crash environment when not worn.



Measured position of a "Stowed Belt" where the belt enters the protected area inside the trim.

Second, inspect the seatbelt webbing at all areas below this measurement point. The photograph below shows that no piece of evidence is too small that is placed on the evidence board.





One way to document the location of belt evidence found beyond the trim panel stow point is to focus solely on the areas of the seatbelt webbing that would have been below the point where the webbing goes into the trim. If the seatbelt was not being worn when the accident began, there is little chance that damage to the seatbelt webbing beyond the trim panel stow point could happen.



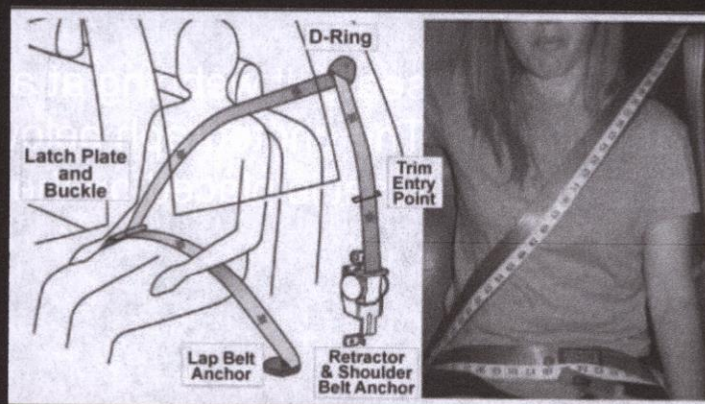
Third, document every mark, cut, dirt/stain, pulled fiber, cupped fiber and damage to the webbing on the label side and non-label side of the belt from 1 inch to the end of the belt. The technician should then transfer each cut, dirt/stain, pulled fiber, cupped fiber and observation of webbing damage onto an evidence board. The best way to accurately and thoroughly document the webbing evidence is to remove the belt and lay it out on a prepared board that has a measuring tape and illustrates the same number of webbing panels as the actual webbing.

Second, inspect the seatbelt webbing at all areas below this measurement point. The photograph below shows that no piece of evidence is too small that is placed on the evidence board.



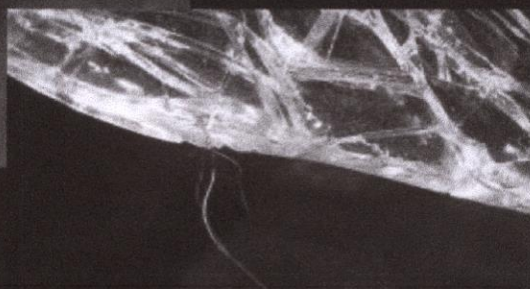
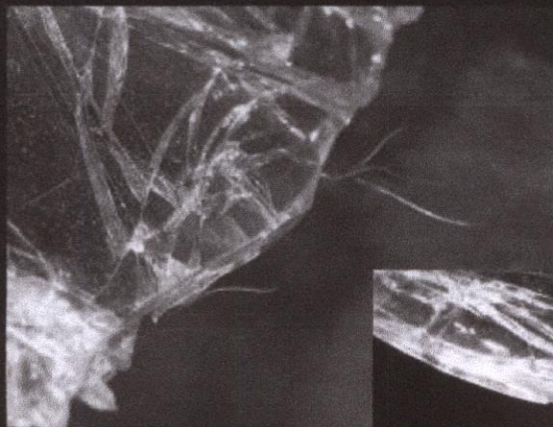
## SURROGATE STUDY- CORRELATING PHYSICAL EVIDENCE TO MEDICAL EVIDENCE

Using a surrogate the same height, weight and waist size as the individual being evaluated, determine where all physical belt evidence that has been transferred onto the seatbelt evidence board matches up on the surrogate's body.

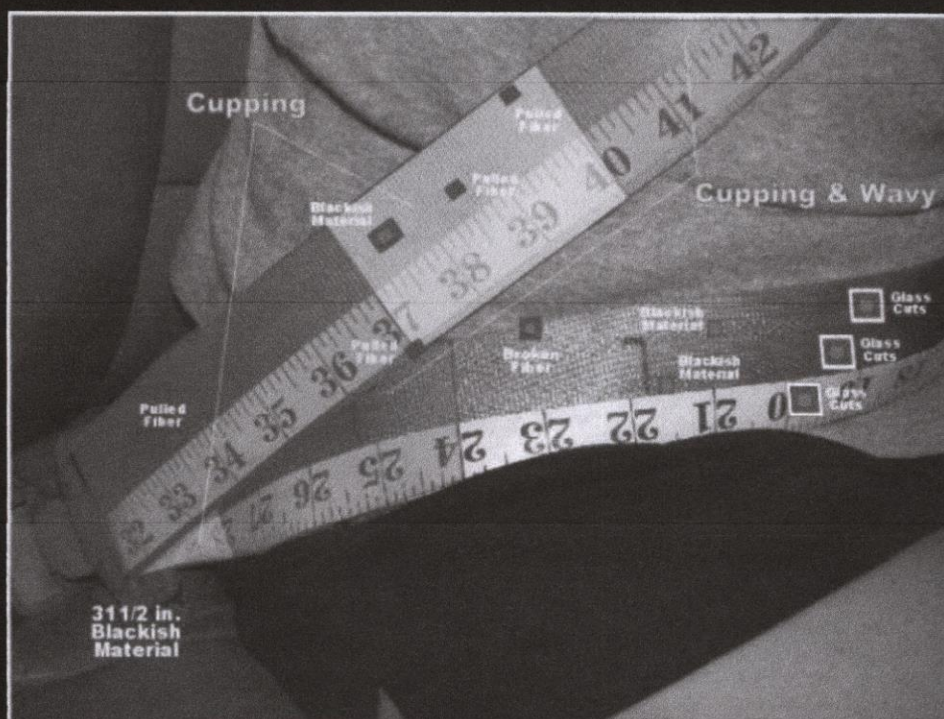


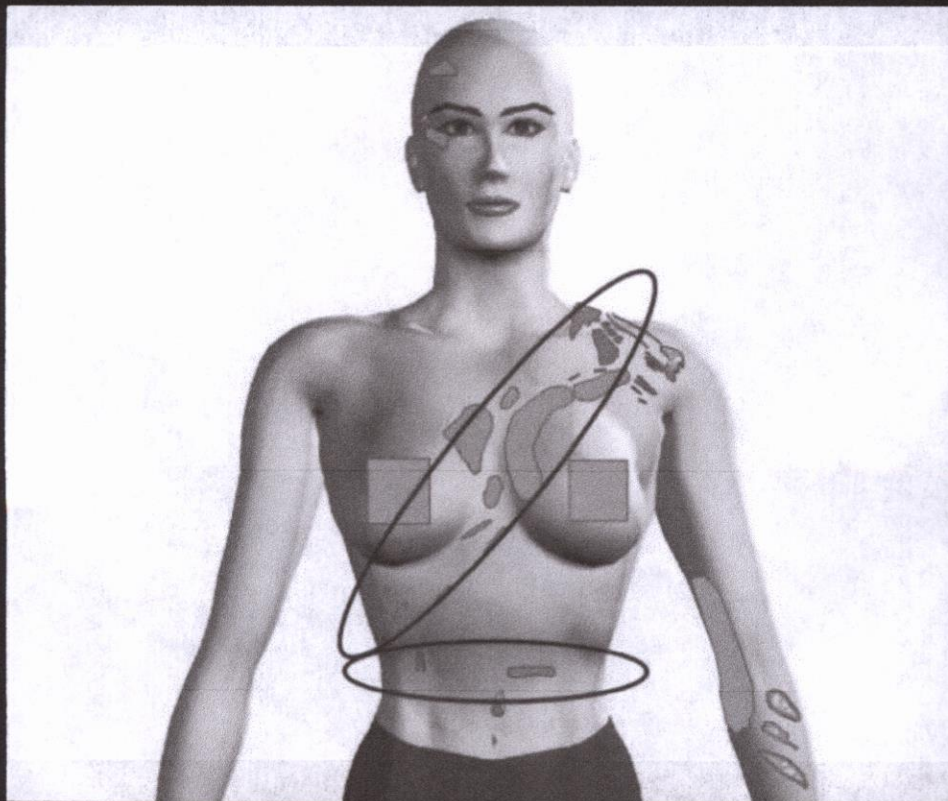




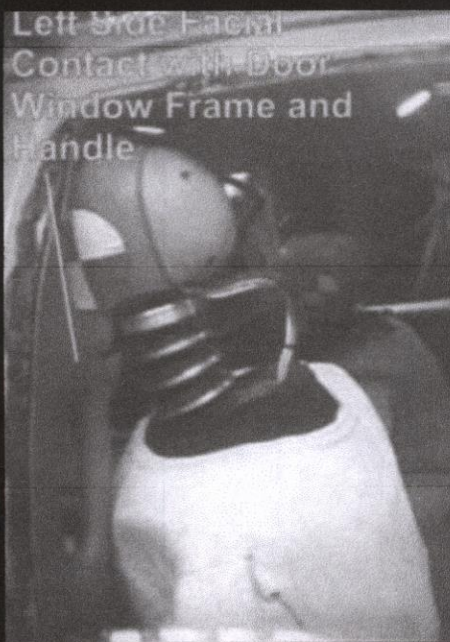












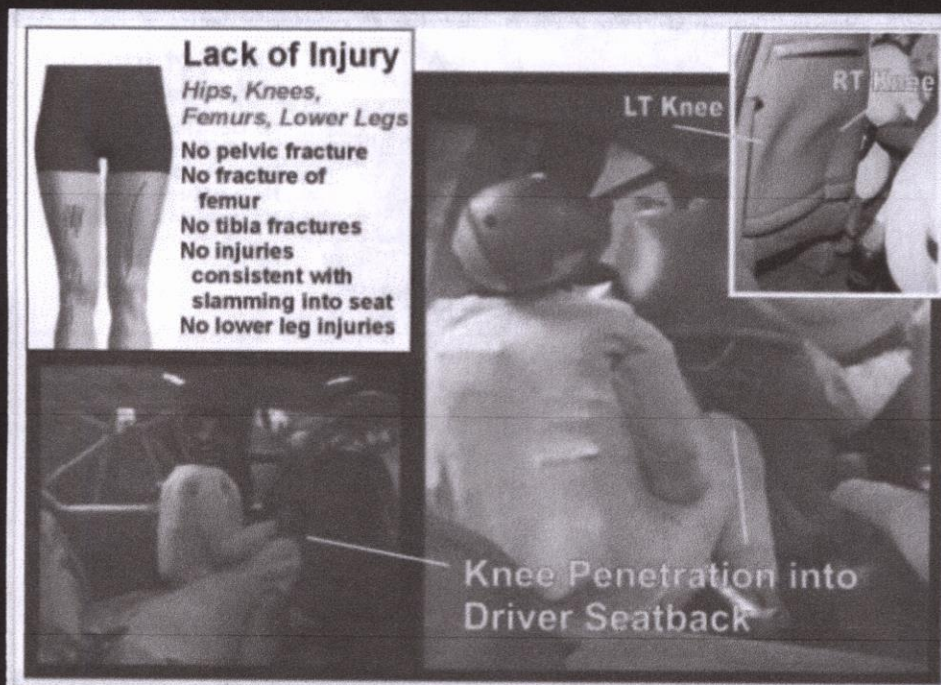
**Lack of Injury**  
*Left Side Face*

No facial fractures  
and/or nasal fractures  
No dental damage  
No jaw fractures  
No abrasions, bruises or  
lacerations  
No lip or tongue injuries



**Lack of Injury**  
*Right Side Face*

No facial fractures  
and/or nasal fractures  
No dental damage  
No jaw fractures  
No abrasions, or  
lacerations  
No lip or tongue injuries







Focus on this area of the webbing  
Label and non-label side of seatbelt is laid out on a  
seatbelt evidence board that includes a measuring  
tape.



## THE VEHICLE INTERIOR MUST BE EVALUATED AND COMPARED TO MEDICAL EVIDENCE

A cut on the seatbelt webbing can correspond to a of diagnosing seatbelt usage by evaluating the bruise or abrasion. More pronounced belt loading presence of damage and lack of damage that are like cupping can correspond to deeper bruises or found inside the vehicle. Just like the absence of fractures on the occupant.

Injury is important to the forensic pathologist, the absence or presence of damage to vehicle components like the steering wheel, instrument panel, lower dash, a-pillar, b-pillar and back of the front seats should also be evaluated. When a driver is unrestrained, the steering wheel and knee bolsters are typically deformed and there is hair in the windshield.





### **Expansion loops**

In an effort to favorably modify the kinematics of test dummies in barrier impacts, seat belt assembly designs often incorporate expansion loops. An expansion loop introduces additional webbing length when a predetermined level of tension is reached. Expansion loops are composed of webbing that is folded along the short axis and stitched in place

The thread material and stitch pattern used to make the rows of stitching is designed to tear at predetermined webbing tension levels, for instance around 600 to 700 pounds. When the stitches tear, the webbing fold will partially open thereby introducing additional webbing. Photograph shows the torn stitches of an expansion loop during a test.



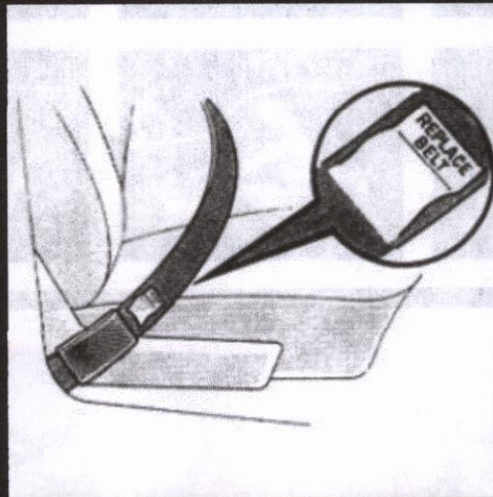


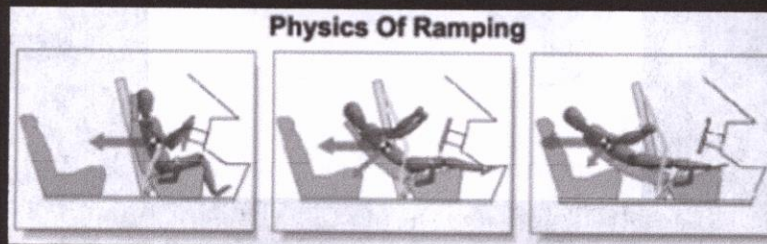
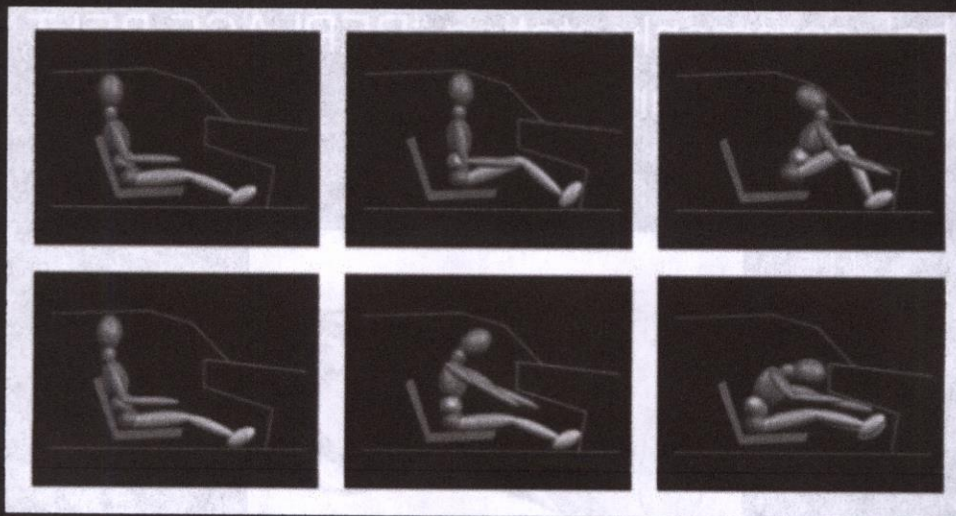
## Seat Belt Anchors

Seat belt attachments are points where the occupant restraining forces are transferred from the seat belt assembly to the vehicle structure. If the webbing does not terminate at a retractor, then the webbing end is anchored to the vehicle.



A warning label, commonly stating "REPLACE BELT," is often visible after the stitches are torn.





Rear –End Collision



### How whiplash occurs

Motorists involved in rear-end crashes commonly experience whiplash. Injuries to the neck occur as the torso accelerates forward and the neck lags, then the head whips forward.

**1.** During normal driving, the head and torso move relative to the vehicle.

**2.** As the vehicle is struck from behind, the head tilts backward.

**3.** After the initial impact, the head snaps forward.



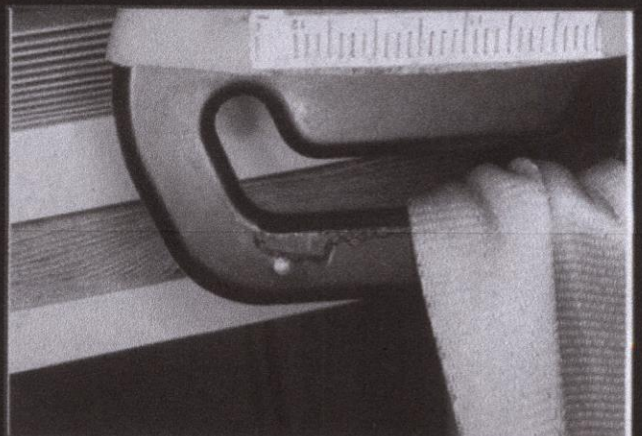
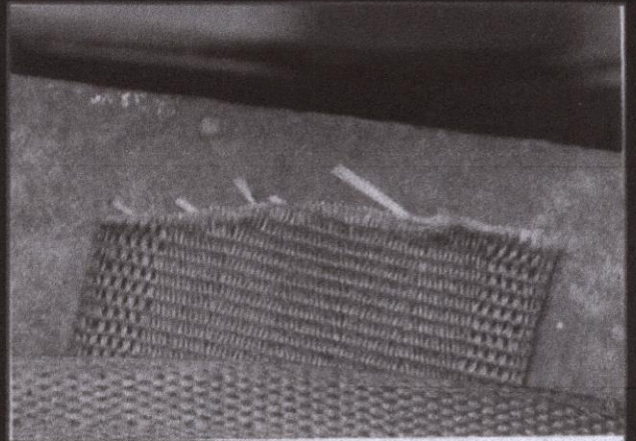
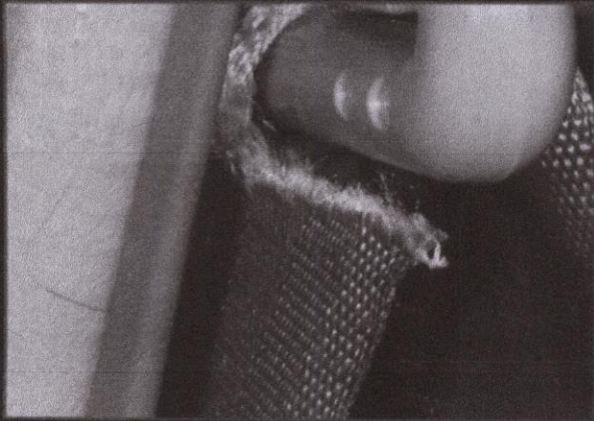
Source: Insurance Institute for Highway Safety

Tim Summers / The Detroit News





They're designed for rear-seat occupants only and, in the event of a frontal or side impact, will inflate the belt across a passenger's chest in 40 milliseconds. When expanded, the belt cover five times more surface area of the body than a normal seat belt, which helps better distribute the forces of a crash.





Under the multi-disciplinary approach, no one particular piece of evidence trumps another. The evidence, when considered as a whole, is utilized to help diagnose seatbelt usage or non-usage. When the “loop is closed,” the investigator can accurately say that a person is belted or unbelted having considered all of the evidence.





# Seat Belt Recalls and Notices

*<http://www.safercar.gov>*



**CAMPAIGN**

## Service Bulletin

NUMBER: SC-39  
PAGE: 1 of 3

SUBJECT: SAFETY RECALL NOTICE No. KY  
Driver and Front Passenger Seat Belt Buckles

MODEL: Certain 2006 and 2007 Suzuki Forenza and Reno Models

Suzuki Motor Corporation has decided to conduct a Safety Recall campaign on certain 2006 and 2007 Suzuki Forenza and Reno vehicles. The campaign code is "KY".

Affected vehicles were produced with improperly manufactured driver and front passenger seat belt buckles. It is possible that plastic pieces inside the seat belt buckle can break off and remain inside the buckle. The buckle could fail to latch, or could seem to have latched without latching completely. If the buckle does not latch completely, the buckle could release without pressing the release button. These buckle malfunctions, which could prevent a person from using the seat belt or could cause the seat belt to fail to function as designed, can increase the risk of injury in a crash.

Suzuki dealers are requested to replace driver and front passenger seat belt buckles. Refer to Forenza/Reno Technical Bulletin, Restraint TS 04 07277.

### 1. Affected Vehicles

Certain 2006-2007 Suzuki Forenza Sedan  
KL5JD56Z 6K234758-KL5JD56Z 7K597150

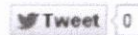


## GM recalls 300,000 Impalas over seat belt problem

Posted: 12:52 pm Fri, October 15, 2010  
By Associated Press



Be the first of your friends to like this.



DETROIT — General Motors said Friday it was recalling more than 300,000 Chevrolet Impala sedans because the seat belts may fail to restrain people in the front seats during a crash.

The National Highway Traffic Safety Administration said on its website that the front-seat belt webbing may not be secured properly to a lap belt anchor on the side of the seat near the doors.

The recall affects Impalas from the 2009 and 2010 model years. GM said 303,100 vehicles are in the United States and more than 19,000 are in Canada.

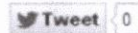
GM said in a statement that it did not know of any injuries or deaths connected to the recall. The Detroit automaker told NHTSA that it had received 32 warranty reports with the seat belt conditions through mid-August.

Dealers will inspect how the belts are anchored. The will reinstall the anchors if needed at no cost to the owners.

Owners will be notified later this month and can contact Chevrolet at 1-800-630-2438.



Be the first of your friends to like this.



Powered by Bookmarkify™

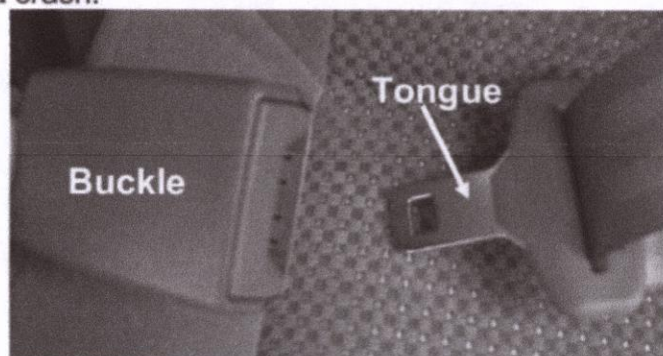
### IMPORTANT SAFETY RECALL NOTICE

Dear Suzuki Owner:

This notice is being sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act.

Suzuki Motor Corporation has decided that a defect which relates to motor vehicle safety exists in certain 2006 and 2007 Suzuki Forenza and Reno vehicles. According to our records, you own one of the vehicles affected by this recall.

Affected vehicles were produced with improperly manufactured driver and front passenger seat belt buckles. It is possible that plastic pieces inside the seat belt buckle can break off and remain inside the buckle. The buckle could fail to latch, or could seem to have latched without latching completely. If the buckle does not latch completely, the buckle could release without pressing the release button. These buckle malfunctions, which could prevent a person from using the seat belt or could cause the seat belt to fail to function as designed, can increase the risk of injury in a crash.

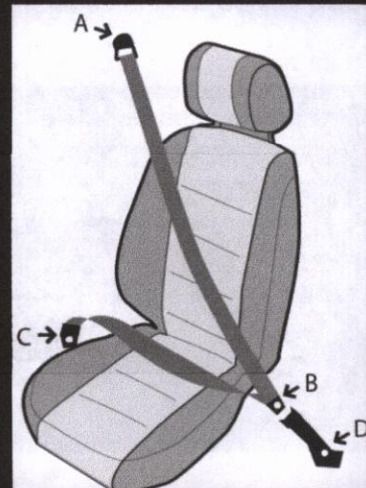


To correct this condition, your Suzuki dealer will replace the front seat belt buckles on your vehicle at no cost to you for parts and labor.



## Common Problems

- Corrosion
- Material obstructing positive latch
- Torsion bar
- Latch locking issues
- Defective webbing
- Anchors defective



**safercar.gov**

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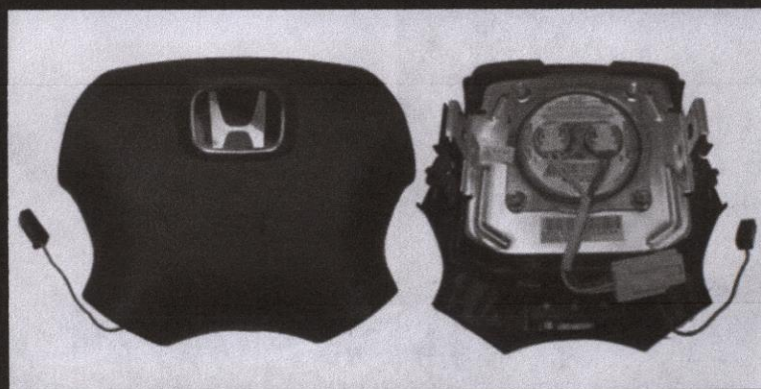
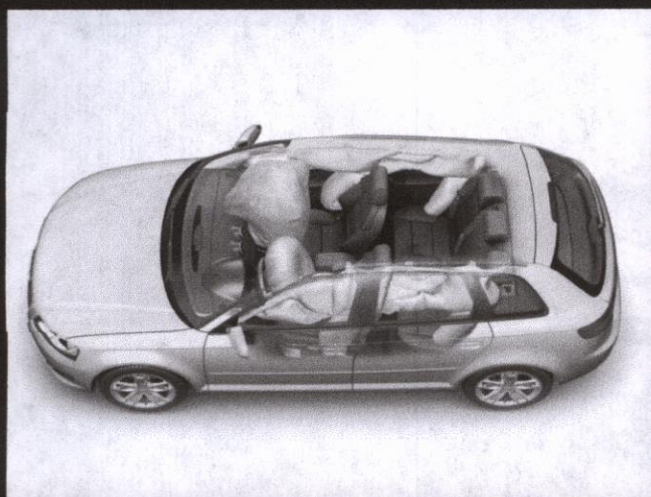
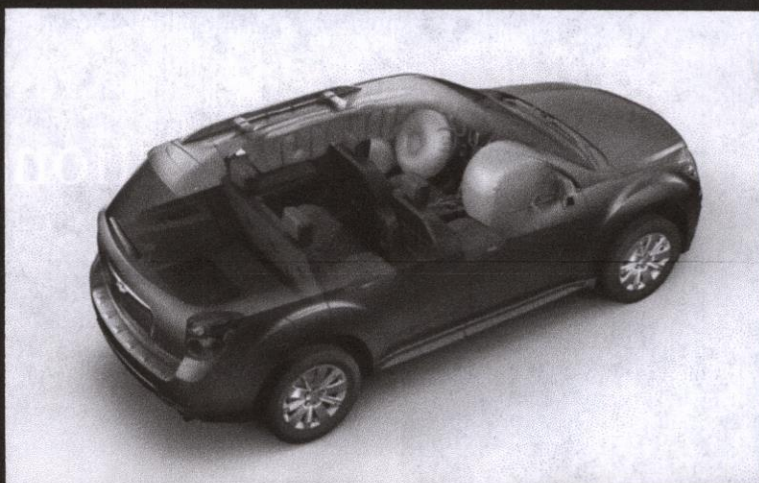
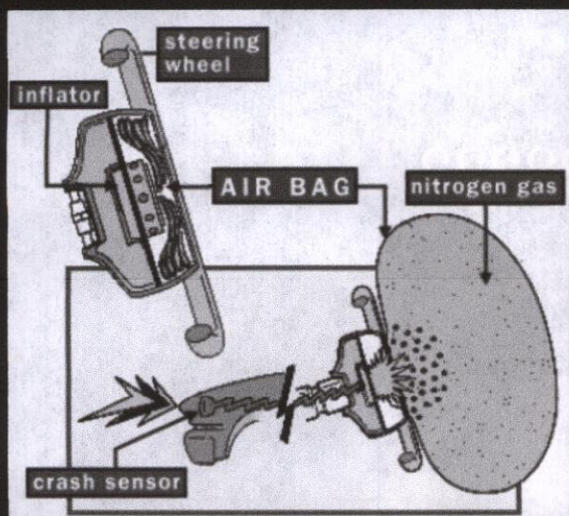
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**TIRES**  


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Questions???????

